

# PRELIMINARY REPORT OF SURVEY OF CERATOPOGONIDAE ON LAUTAU ISLAND, HONG KONG (DIPTERA, CERATOPOGONIDAE)

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**Abstract** Eleven species from 5 genera belonging to 3 subfamilies of Ceratopogonidae were collected on Lautau Island in the first survey. Among them, two are new species and three are new record species in China, while the rest are recorded in the Hong Kong Special Administrative Region for the first time. This paper describes one of the two new species, *Brachypogon halimae* Yu et Li, sp. nov. The other has already been reported in another paper.

**Key words** Diptera, Ceratopogonidae, *Brachypogon*, new species.

Lautau Island, also known as Tai Yu Island, is the largest one of the more than 230 outlying islands of the Hong Kong Special Administrative Region (the SAR). Its Lantau Peak, also known as Fung Wong Shan, is the second highest mountain of the SAR. Lantau Island has a mountainous terrain and rich vegetation, strategically situated to the east of Ling Ding Yang, it is home to the Hong Kong International Airport at Chek Lap Kok, which is one of the most representative modern architectural style airports in the world. Therefore, Lautau Island is one of the important sea and air channels of the SAR and the nation as a whole. It is imperative to identify the regional fauna of the disease vector insects on the island. A preliminary day survey and specimen collection were carried out on the slopes of Lantau Peak and Pak Mong Village by the SAR's Food and Environmental Hygiene Department on 25 May 2006. By taxonomic identification, 11 species belonging to 5 genera of Ceratopogonidae were found. It is clear from the evidence that Lautau Island has rich biodiversity. The collected species of Ceratopogonidae are analysed as follows.

## Collection results

Midge specimens belonging to 11 species of 5 genera of 3 subfamilies were collected in the areas around the Giant Buddha at Lantau Peak and Pak Mong Village on 25 May 2006 by the day survey. Among them, 2 are new species and 3 are new record species in China. All are recorded in Hong Kong for the first time. The following is a list of their names:

### Subfamily Dasyheleinae Lenz, 1934

#### *Dasyhelea* Kieffer, 1911

*Dasyhelea (Dasyhelea) fomicus* Yu et Liu, 2005*Dasyhelea (Prokempia) horridus* Yu, 2005 *Dasyhelea (Prokempia) ludingtonensis* Zhang et Yu, 1996

### Subfamily Forcipomyiinae Lenz, 1934

#### *Forcipomyia* Meigen, 1818

- \* *Forcipomyia (Mirohelea) brevibellata* Clastrier et Wirth, 1955
- Forcipomyia (Mirohelea) phototropisna* Liu et Yu, 2001
- Forcipomyia (Mirohelea) telechos* Debenham, 1987
- Forcipomyia (Mirohelea) uxianensis* Liu et Yu, 2001
- Forcipomyia (Warnea) leslici* Wirth, 1971

### Subfamily Ceratopogoninae Newman, 1834

#### *Culicoides* Latreille, 1809

*Culicoides circumbasalis* Tokunaga, 1959.

#### *Brachypogon* Kieffer, 1899

*Brachypogon halimae* Yu et Li new species.

#### *Stilbezzia* Kieffer, 1911

*Stilbezzia chlorogastrula* Yu & Yuan, 2007.

### Description of the new species

#### *Brachypogon halimae* Yu et Li, sp. nov. (Figs. 1-3)

Male. Wing. Length 0.38 mm, width 0.26 mm.

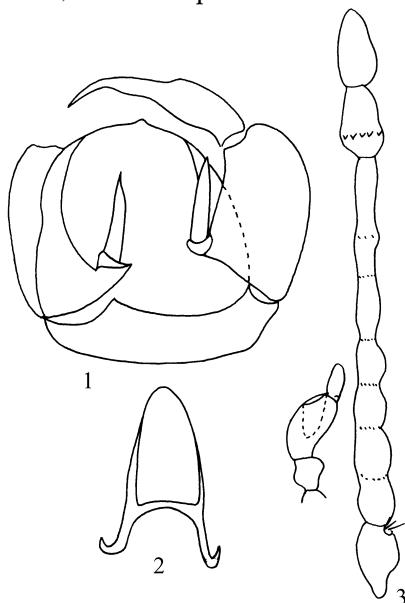
Head Brown. Pubescence is grown between the ommatidia of the two compound eyes. Short antennae and long plumose hair. Two conspicuous segments at the distal end of the antennae but most of the remaining segments are inconspicuous, almost fused. Short maxillary palps. Short and stout third segment with deep sensory pit. Fused fourth and fifth segments. Length ratio of various segments at 2:3:10:7. Short mouthpart, with teeth at end of mandible.

Thorax. No radial cells, no spots and no macrotrichia on the wings. Median vein 2 (M2) not well developed. Radius shorter than half of front wing margin, no radial cell (Fig. 2). Light brown legs, without spots. Claws well developed and of equal length. No pulvilli. Back of first tarsus of hind leg covered with short spiniform bristles. Five bristles at tibia terminal of hind leg. TR and F-T of legs as follows (Table 1).

Table 1.

Leg	TR	F-T
Fore	2.18	65 60 24 !! : 8 5 7
Mid	2.06	65 60 35 17. 10 5 -
Hind	1.67	- : 60 20 12 8 5 8

Abdomen. Light brown, shorter than the combined length of head and thorax. Basistyle of hypopygium shorter than the dististyle, which is small and pointed. The 9<sup>th</sup> tergite is shield shaped with medial tubercles at posterior margin. Screen-like aedeagus. Paramere in pair, candlelike, short and pointed.



Figs 1-3. *Brachypogon halinos* sp. nov. 1. Hypopygium. 2. Maxillary palp and antenna. 3. Aedeagus.



Fig 4. Comparison of size between *Brachypogon halinos* (upper corner) and *Culicoides* sp.

Type specimen. One male was collected at the mountain forest behind the bronze Giant Buddha at Lantau Peak in the morning of 25 May 2006. Total body length only 0.46 mm, far shorter than half of the wing of *Culicoides circumbasalis* Tokunaga. Specimen was deposited in the Medical Entomology Collection Gallery.

Discussion. The aedeagus of this new species is similar to *Brachypogon* (*B.*) *arius* de Meillon & Hardy,

1954 in shape, which is distributed in Central Africa, and *Brachypogon* (*B.*) *vittiosus* (Winnertz), 1852, which is widely distributed in the Palaearctic Region. But the paramere is totally different in shape and the 9<sup>th</sup> tergite is also visually different.

Etymology. The present species is named after the type locality.

Descriptions of the newly recorded species.

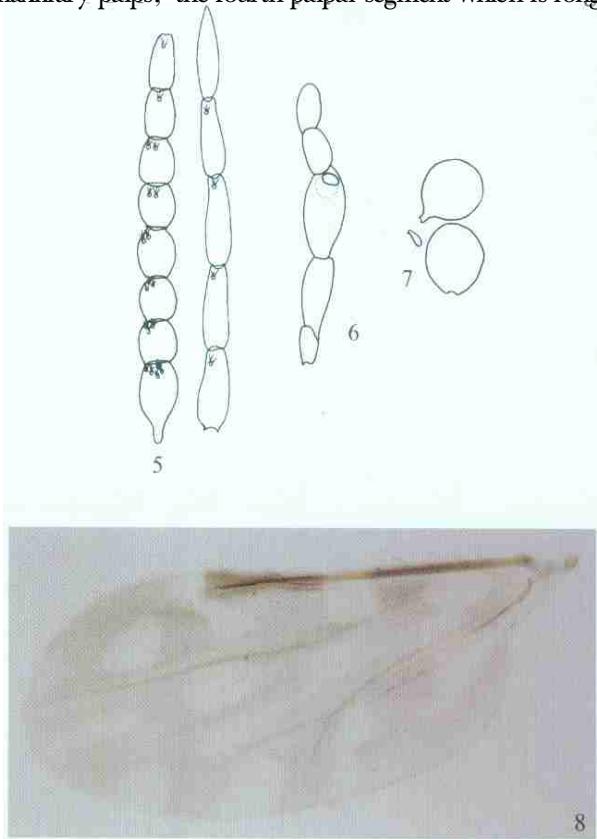
*Culicoides circumbasalis* Tokunaga, 1959 New record to China (Figs. 5-8)

Wing surface is speckled with light patterns but stigmal spots are moderately dark, extending to the tip of the second radial cell. Sensilla coeloconica is found in each of the flagellar segment of the antenna. The third segment of the maxillary palp is swollen with a sensory pit. Females have two well-developed spermathecae of unequal size.

First found in New Ireland and reported to be widely distributed in Malaysia, New Guinea, the Philippines and Thailand. There isn't the previous record on this species in our country. A female was collected with trapping net at 7:00 p.m. on 25 May this year.

*Forcipomyia* (*Microhelea*) *brevilabellata* Clastrier et With, 1955 New record to China (Figs. 9-11)

This species belongs to the subgenus *Microhelea* of *Forcipomyia*. Its distinctive features are the short spike-like bristles near the distal end of the third segment of the maxillary palps, the fourth palpal segment which is longer



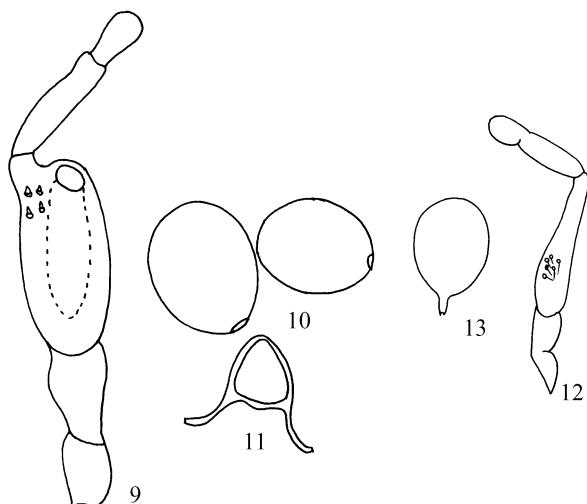
Figs 5-8. *Culicoides circumbasalis*. 5. Antenna. 6. Maxillary palp. 7. Spermathecae. 8. Wing.

than the third segment by half of its length, and its two spermathecae which are of unequal size. This species has only been reported in French New Guinea. A female was collected from Pak Mong Village by Ms HO Churr Man of the Food and Environmental Hygiene Department of the Hong Kong SAR.

*Forcipomyia (Warmeia) leslei* Wirth, 1971 New record to China (Figs. 12-13)

*Forcipomyia (Warmeia) bicolor* Saunders, 1957

The discovery of *Forcipomyia (Warmeia) bicolor* in Puerto Rico, North America, was first reported by Saunders (1957), together with a comprehensive description of its larval stage and adult morphology of both sexes. In 1979, Wirth and Soria again gave a full account of the species, revised its scientific name and reported on its distribution in areas from the West Indies to Columbia and Venezuela. At about 11 a. m. on 25



Figs 9-11. *Forcipomyia (Microhelia) brevilabellata*. 9. Maxillary palp. 10. Spermathecae. 11. Subgenital plate. Figs. 12-13. *Forcipomyia (Warmeia) leslei*. 12. Maxillary palp. 13. Spermatheca.

## 香港大屿山岛蠓科调查初报 (双翅目, 蠓科)

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**摘要** 2006 年 5 月在大屿山岛初次调查, 采获一批蠓科昆虫, 经分类鉴定共有蠓类 3 亚科 5 属 11 种, 其中有 1 个新种, 3 个中国新纪录, 其余蠓种除绿腹柱蠓 *Stilobezzia chlorogastera* Yu & Yuan 外, 都是香港特区的首次记录。描述了

关键词 双翅目, 蠓科, 短蠓属, 新种。

中图分类号 Q969. 442. 7

May 2006, Mr. CHAN Ka lung of the Food and Environmental Hygiene Department of the Hong Kong SAR collected a female *Forcipomyia (Warmeia) leslei* at the forest margin of Lautau Peak. The specimen was classified as such because of the special and short sensilla found near the base of its maxillary palp's third segment and the short and straight neck of its round-shaped spermatheca. The record is not only the first in our country, but also the first in Asia.

The remaining 6 species were already recorded in our country. Their detailed descriptions are available in Ceratopogonidae of China (Yu, 2005). No repetition will be made in this paper.

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滨海短蠓 *Brachypogon halimus* Yu & Li, sp. nov., 同时对环基库蠓 *Culicoides airambasalis* Tokunaga、短唇铗蠓 *Forcipomyia (Microhelia) brevilabellata* 和浅淡铗蠓 *Forcipomyia (Warmeia) leslei* 三种中国新纪录种做了简单的记述。